

What is claimed is:

1 1. A method for actively characterizing the latency of an audio channel of a computer,  
2 comprising:

3 creating at least two signal streams for a waveform in said audio channel;  
4 detecting the presence of the first signal sample stream for said waveform and the  
5 second signal sample stream for said waveform at a point in said audio channel; and  
6 measuring the time between the detections of the signal sample streams.

1 2. The method of claim 1, wherein said audio channel includes an audio signal output device  
2 and an audio signal input device;

3 creating a waveform in said audio channel comprising creating a waveform in said  
4 audio channel before said audio signal output device, said waveform having a signature to activate  
5 said audio signal output device to produce an audio output signal; and

6 detecting the presence of a first signal sample stream for said waveform and a  
7 second signal sample stream for said waveform at a point in said audio channel comprising  
8 detecting the signal sample streams in said audio channel at a point after said audio signal input  
9 device, wherein the first signal sample stream was propagated along a reference channel path in  
10 said computer and the second signal stream was produced from said audio output signal and  
11 propagated along a local channel path in said computer.

1 3. The method of claim 2, wherein the audio signal output device includes at least one  
2 speaker.

3 4. The method of claim 2, wherein the audio signal input device includes a microphone.

4 5. The method of claim 2, wherein said waveform comprises a chirp waveform.

5 6. The method of claim 2, wherein said waveform comprises a pseudo-random sequence  
2 waveform.

1 7. The method of claim 2, wherein said waveform comprises a sine waveform.

1 8. The method of claim 2, wherein measuring the time between the detections comprises  
2 counting the number of signal samples between the detections.

1 9. The method of claim 1, wherein after creation, the two signal streams propagate along two  
2 different paths in said computer.

1 10. The method of claim 1, wherein said computer comprises a personal computer.

2 11. The method of claim 1, and further comprising: delaying at least one of the signal sample  
3 streams based, at least in part, on the time measured between the detections.

4 12. A method for actively characterizing the latency of an audio channel of a computer  
comprising:

3 creating at least a first and a second waveform in said audio channel;  
4 detecting the presence of the first and second waveform at a point in said audio  
5 channel; and  
6 measuring the time between the detections of the waveforms.

1 13. The method of claim 12, wherein at least one of said waveforms comprises a chirp  
2 waveform.

1 14. The method of claim 12, wherein at least one of said waveforms comprises a pseudo-  
2 random sequence waveform.

1 15. The method of claim 12, wherein ~~at least~~ one of said waveforms comprises a pseudo-  
2 random sequence waveform.

1 16. The method of claim 12, wherein after creation, the two waveforms propagate along two  
2 different paths in said computer.

1 17. The method of claim 12, wherein said computer comprises a personal computer.

1 18. ~~The method of claim 12, and further comprising: delaying at least one of the waveforms,~~  
2 ~~based at least in part, on the time measured between the detections.~~

1 19. An article comprising:

2 a machine-readable storage medium, said storage medium having stored thereon  
3 instructions, said instructions, when executed by a computer system including an audio channel,  
4 resulting in the following steps:

5 creating at least two signal streams for a waveform in said audio channel;  
6 detecting the presence of the first and the second signal sample stream for said  
7 waveform at a point in said audio channel; and  
8 measuring the time between the detections of the signal sample streams.

1 20. The article of claim 19, wherein the waveform comprises a chirp waveform.

1 21. The article of claim 19, wherein the computer system including an audio channel comprises  
2 a personal computer system including an audio channel.

1 22. An article comprising;

2 a machine-readable storage medium, said storage medium having stored thereon  
3 instructions, said instructions, when executed by a computer system including an audio channel,  
4 resulting in the following steps:

5 creating at least two signal waveforms in said audio channel;  
6 detecting the presence of the first and the second waveforms at a point in said  
7 audio channel; and  
8 measuring the time between the detections of the waveforms.

1     24.     The article of claim 22, wherein the computer system including an audio channel comprises  
2     a personal computer system including an audio channel.

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